

Annuity Problems

TI83 -TVM Solver Instructions on p568-573

Work Period

p498-500 q. 6,8,9,11,14

p506-508 q. 4,5,6,9,12

8. Miguel wants to buy an entertainment system as a gift for his sister's wedding. He estimates that when she marries 1 year from now, the system will cost \$2499, plus GST (government sales tax) at 6% and PST (provincial sales tax) at 8%. He knows he can deposit \$225 a month into an account earning 3.5%/a compounded monthly. Will he have enough money to buy the gift? Explain.

N=

I% =

P/V =

PMT =

F/V =

P/Y =

C/Y =

END

May 20-8:42 AM

Jun 3-8:49 AM

8. Miguel wants to buy an entertainment system as a gift for his sister's wedding. He estimates that when she marries 1 year from now, the system will cost \$2499, plus GST (government sales tax) at 6% and PST (provincial sales tax) at 8%. He knows he can deposit \$225 a month into an account earning 3.5%/a compounded monthly. Will he have enough money to buy the gift? Explain.

N= 1 x 12

I% = 3.5

P/V = 0

PMT = -225

F/V = 2743.74

P/Y = 12

C/Y = 12

END

$$2499 \times 1.13 = 2823.87$$

Alpha Solve -231.57
2823.87

Jun 3-8:49 AM

11. Mario deposits \$25 at the end of each month for 4 years into an account that pays 9.6%/a compounded monthly. He then makes no further deposits and no withdrawals. Determine the balance 10 years after his last deposit.

N=

I% =

P/V =

PMT =

F/V =

P/Y =

C/Y =

END

Jun 3-8:59 AM

11. Mario deposits \$25 at the end of each month for 4 years into an account that pays 9.6%/a compounded monthly. He then makes no further deposits and no withdrawals. Determine the balance 10 years after his last deposit.

N= 12 x 4

I% = 9.6

P/V = 0

PMT = -25

F/V = -1455.95

P/Y = 12

C/Y = 12

END

N= 10 x 12

I% = 9.6

P/V = 1455.95

PMT = 0

F/V = 3788.00

P/Y = 12

C/Y = 12

END

Jun 3-8:59 AM

6. Carollynne has found her dream home in Pictou, Nova Scotia. It is selling for \$500 000. When she retires 2 years from now, she plans to sell her present house for \$450 000 and move. She decides to set aside \$900 every two weeks until she retires in a fund earning 10.5%/a, compounded every second week. What is the difference between the future value of Carollynne's investment and the extra \$50 000 she needs for her dream home?

N=

I% =

P/V =

PMT =

F/V =

P/Y =

C/Y =

END

Jun 3-8:33 AM

6. Carollynne has found her dream home in Pictou, Nova Scotia. It is selling for \$500 000. When she retires 2 years from now, she plans to sell her present house for \$450 000 and move. She decides to set aside \$900 every two weeks until she retires in a fund earning 10.5%/a, compounded every second week. What is the difference between the future value of Carollynne's investment and the extra \$50 000 she needs for her dream home?

N = 2×26
 I% = 10.5
 P/V = 0
 PMT = - 900
 F/V = 51 960.58
 P/Y = 26
 C/Y = 26
 END

Jun 3-8:33 AM

9. Felix's family has decided to deposit \$350 into an annuity every 3 months for 4 years. The account will earn 3.75%/a compounded quarterly. Starting 3 months after the last deposit, Felix will withdraw the money every 3 months in equal payments for 2 years. What is the amount of each withdrawal?

N =
 I% =
 P/V =
 PMT =
 F/V =
 P/Y =
 C/Y =
 END

Jun 3-9:10 AM

9. Felix's family has decided to deposit \$350 into an annuity every 3 months for 4 years. The account will earn 3.75%/a compounded quarterly. Starting 3 months after the last deposit, Felix will withdraw the money every 3 months in equal payments for 2 years. What is the amount of each withdrawal?

N = 4 x 4	N = 2 x 4
I% = 3.75	I% = 3.75
P/V = 0	P/V = 6011.05
PMT = -350	PMT = -783.50
F/V = 6011.05	F/V = 0
P/Y = 4	P/Y = 4
C/Y = 4	C/Y = 4
END	END

Jun 3-9:10 AM

5. Mary needs \$750 a year for 3 years to buy textbooks. She will start university in 1 year. Her savings account pays 4%/a compounded annually. How much needs to be in her account now to pay for the books?

N =
 I% =
 P/V =
 PMT =
 F/V =
 P/Y =
 C/Y =
 END

Jun 3-9:17 AM

5. Mary needs \$750 a year for 3 years to buy textbooks. She will start university in 1 year. Her savings account pays 4%/a compounded annually. How much needs to be in her account now to pay for the books?

N = 1 x 3
 I% = 4
 P/V = 2091.32
 PMT = -750
 F/V = 0
 P/Y = 1
 C/Y = 1
 END

Jun 3-9:17 AM

N =
 I% =
 P/V =
 PMT =
 F/V =
 P/Y =
 C/Y =
 END

Jun 3-8:32 AM

p 499 #6 \$500,000 - 2 yrs from now

450,000 - house

900 biweekly 10.5%_{yr}

$n = 26 \times 2 = 52$
 $i = 10.5\% / 26 = 0.0040$

$$A = \frac{R[(1+i)^n - 1]}{i}$$

$$= \frac{900[(1+0.0040)^{52} - 1]}{0.0040}$$

$$= \frac{900[(1.0040)^{52} - 1]}{0.0040}$$

$$= \frac{900[1.2307 - 1]}{0.0040}$$

$$= \frac{900[0.2307]}{0.0040}$$

$$= 51,908.05$$

May 20-9:48 AM

p 499 #9 $R = 100$
 $i = 0.04/2 = 0.02$
 $n = 21 \times 2 = 42$

$$A = \frac{R[(1+i)^n - 1]}{i}$$

$$= \frac{100[(1.02)^{42} - 1]}{0.02}$$

$$= \frac{100(2.29 - 1)}{0.02}$$

$$= \frac{100(1.29)}{0.02}$$

$$= \frac{129}{0.02}$$

$$= 6496.22$$

$A = P_0(1+i)^n$ $i = 0.04/2 = 0.02$
 $n = 4 \times 2 = 8$
 $P_0 = 6496.22$

$= \$7599.64$

May 20-10:03 AM

p 499 #11

May 25-9:50 AM

May 31-9:48 AM